

EXHIBIT A

Google’s Proposed Revisions to Jury Instructions (1/17/2024)

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UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

_____)	
SINGULAR COMPUTING LLC,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No.
)	19-12551-FDS
GOOGLE LLC,)	
)	
Defendant.)	
_____)	

JURY INSTRUCTIONS

SAYLOR, C.J.

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1. DUTY OF THE JURY TO FIND FACTS AND FOLLOW THE LAW

It is your duty to render a verdict, based on the facts as you find them from the evidence, and the law as I give it to you. You are the ones who determine the facts; the determination of the law is my duty as the judge. It is your duty to apply the law exactly as I give it to you, whether you agree with it or not.

In following my instructions, you must follow all of them, and not single out some and ignore others. They are all important.

You must not interpret these instructions, or anything I may have said or done, as a suggestion by me as to what verdict you should return—that is a matter entirely for you to decide.

2. BURDEN OF PROOF—PREPONDERANCE OF THE EVIDENCE

Singular has the burden of proving its claims of patent infringement by what is called the “preponderance of the evidence.”

The “preponderance of the evidence” means that for Singular to prevail on its claims of patent infringement, the jury must believe that what it claims is more likely true than not. To put it another way, if you were to put one side’s evidence and the other side’s evidence on opposite sides of a scale, the party with the burden of proof would have to make the scale tip somewhat in its direction.

3. BURDEN OF PROOF—CLEAR AND CONVINCING EVIDENCE

Google has the burden of proving its defense that the patents are invalid by “clear and convincing” evidence, rather than by a “preponderance of the evidence.”

That means that for Google to prevail on its defenses that the patents are invalid, it must persuade you that it is highly probable that what it claims is true. Put another way, you must have a clear conviction that it is true.

“Clear and convincing evidence” is a higher standard than proof by a “preponderance of the evidence.” It is a lower standard, however, than proof “beyond a reasonable doubt,” which is the standard used in criminal cases.

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**4. VERDICT BASED SOLELY ON THE EVIDENCE; IMPROPER
CONSIDERATIONS**

Your verdict must be based solely upon the evidence.

You may not base your verdict on any personal feelings, prejudices, or sympathies you
may have about the plaintiff~~s~~ or the defendant~~s~~ or about the nature of the claims alleged.

5. ALL PERSONS EQUAL BEFORE THE LAW

This case should be considered and decided as an action between persons of equal standing in the community, of equal worth, and holding the same or similar stations in life. A corporation or other entity is entitled to a fair trial the same as an individual person.

6. THE EVIDENCE

The evidence in this case consists of the sworn testimony of witnesses, both on direct and cross-examination; the exhibits that have been received into evidence; and any facts to which the parties have agreed or stipulated. You should consider all of the evidence, no matter what form it takes, and no matter which party introduced it.

Whether the ~~parties have~~plaintiffs have sustained their burdens of proof does not depend upon the number of witnesses they have called, or upon the number of exhibits they have offered, but instead upon the nature and quality of the evidence presented.

7. WHAT IS NOT EVIDENCE

Certain things are not evidence.

(1) Arguments and statements by lawyers are not evidence. The lawyers are not witnesses. What they say in their opening statements, closing arguments, and at other times is intended to help you interpret the evidence, but it is not evidence. If the facts as you remember them from the evidence differ from the way the lawyers have stated them, your memory of the facts should control.

(2) Questions by lawyers, standing alone, are not evidence. Again, the lawyers are not witnesses. The question and the answer taken together are the evidence.

(3) Objections by lawyers are not evidence. Lawyers have a duty to their clients to object when they believe a question or an exhibit is improper under the rules of evidence. You should not be influenced by any objection or by my ruling on it, and you should not speculate or guess about what the answer might have been or what an exhibit might have said.

(4) Anything that I have struck or instructed you to disregard is not evidence.

(5) Anything you may have seen or heard when the court was not in session is not evidence. You must decide the case solely on the evidence received at trial.

8. KINDS OF EVIDENCE—DIRECT AND CIRCUMSTANTIAL

Evidence may take the form of either “direct evidence” or “circumstantial evidence.”

“Direct evidence” is direct proof of a fact, such as testimony from an eyewitness that the witness saw something. “Circumstantial evidence” is indirect evidence; that is, proof of one or more facts from which you could draw a reasonable inference that another fact exists, even though it has not been proved directly.

You are entitled to consider both direct and circumstantial evidence. It is for you to decide how much weight to give to any particular piece of evidence, whether direct or circumstantial.

9. INFERENCES

Although you may consider only the evidence presented in the case, you are not limited to the plain statements made by witnesses or contained in the documents. In other words, you are not limited solely to what you saw and heard as the witnesses testified.

You are also permitted to draw reasonable inferences from the facts, if you believe those inferences are justified in light of common sense and personal experience. An inference is simply a deduction or conclusion that may be drawn from the facts that have been established.

Any inferences you draw must be reasonable, and based on the facts as you find them. Inferences may not be based on speculation or conjecture.

10. CAUTIONARY AND LIMITING INSTRUCTIONS

A particular item of evidence is sometimes received for a limited purpose only. That is, it can be used by you only for one particular purpose, and not for any other purpose. I have told you when that occurred, and instructed you on the purposes for which the item can and cannot be used.

11. STIPULATIONS

Some of the evidence has been received in the form of stipulations. A stipulation simply means that the plaintiffs and the defendants accept the truth of a particular proposition or fact.

Because there is no disagreement, there is no need for evidence as to that issue apart from the stipulation. You may accept the stipulation as a fact to be given whatever weight you choose.

12. CREDIBILITY OF WITNESSES

You do not have to accept the testimony of any witness if you find that the witness is not credible. You must decide which witnesses to believe, considering all of the evidence and drawing upon your common sense and personal experience. You may believe all of the testimony of a witness, or some of it, or none of it. You alone are the judges of the witnesses' credibility.

In deciding whether to believe testimony of the witnesses, you may want to consider such factors as their conduct and demeanor while testifying; any apparent fairness or unfairness they may have displayed; any interest they may have in the outcome of the case; any prejudice or bias they may have shown; their opportunities for seeing and knowing the things about which they have testified; the reasonableness or unreasonableness of the events that they have related to you in their testimony; and any other evidence that tends to support or contradict their versions of the events.

13. DEPOSITION TESTIMONY

You have been shown video deposition testimony given under oath by a number of witnesses. You should consider that evidence in the same manner as testimony given at the trial.

[In judging the credibility of a witness, you should not consider whether the witness appeared live or by video.](#)

14. INTERROGATORIES

Evidence was presented to you in the form of answers of one of the parties to written interrogatories submitted by the other side. These answers were given in writing and under oath before the trial in response to questions that were submitted under established court procedures. You should consider the answers in the same way as if they were made from the witness stand.

15. PRIOR INCONSISTENT STATEMENTS

The testimony of a witness may be discredited or impeached by showing that he or she previously made statements that are inconsistent with their present testimony. If a witness made inconsistent statements about any significant matter, you have a right to distrust the testimony of that witness in other respects. You may reject all of the testimony of that witness or give it such credibility as you may think it deserves.

Sometimes, of course, people make innocent mistakes, particularly as to unimportant details; not every contradiction or inconsistency is necessarily important. Again, you alone are the judges of the witnesses' credibility.

16. EXPERT WITNESSES~~TECHNICAL OR OPINION TESTIMONY~~

You have heard testimony from "expert witnesses" ~~persons~~ who were permitted to explain certain technical issues or to express certain opinions about certain subjects. A witness who has special knowledge, skill, experience, training, or education on a particular topic may testify as an expert and provide an explanation or state an opinion concerning such matters.

You may accept or reject that testimony, in whole or in part. In weighing the testimony, you should consider the witness's education and experience and the soundness of the reasons given for the opinion. You should also consider the credibility of the testimony, as you would with any witness.

17. NOTE-TAKING

As I indicated at the beginning of the trial, you have been permitted to take notes, but some cautions apply. You should bear in mind that not everything that is written down is necessarily what was said. When you return to the jury room to discuss the case, do not assume simply because something appears in somebody's notes that it necessarily took place in court. Notes are an aid to recollection, nothing more; the fact that something is written down does not mean that it is necessarily accurate.

18. EXHIBIT NUMBERS

The numbers assigned to the exhibits are for convenience and in order to ensure an orderly procedure. You should draw no inference from the fact that a particular exhibit was assigned a particular number, or that there may be gaps in the number sequence.

19. ELEMENTS OF THE CAUSES OF ACTION CLAIMS—INTRODUCTION

I am now going to give you some instructions on the nature of the plaintiff's causes of action claims and what the plaintiff must prove in order to succeed on those causes of action claims.

The plaintiff is Singular Computing LLC. I will refer to it as Singular. The defendant is Google LLC. I will refer to it as Google.

Singular has brought two causes of action claims against Google:

- a cause of action claim that Google's TPUv2 and v3 infringe for patent infringement under claim 53 of the '273 patent;
- a cause of action claim that Google's TPUv2 and v3 infringe for patent infringement under claim 7 of the '156 patent.

Singular further contends that Google's infringement was willful.

Google denies that either its TPUv2 or its TPUv3 infringes either patent, and further denies that it willfully infringed the patents, has denied liability as to both claims of patent infringement. In addition, Google has asserted as a defense that Singular's causes of action those causes of action claims are barred because the patents are invalid.

If you decide that Google is liable for infringing either of Singular's patents and that the patents are not invalid, you will then decide what (if any) damages Google should pay in order to compensate Singular for that infringement.

I will now explain what the parties have to prove in order to succeed on their various claims and defenses.

20. OVERVIEW OF PATENT CLAIMS AT ISSUE

~~This case involves two claims of patent infringement.~~ The patents at issue are owned by Singular: U.S. Patent No. 8,407,273, which I will call the '273 patent, and U.S. Patent No. 9,218,156, which I will call the '156 patent. The claims at issue here are claim 53 of the '273 patent and claim 7 of the '156 patent.

~~You must determine infringement and invalidity with respect to each patent claim separately. I will begin with some introductory instructions concerning patent claims.~~

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21. PATENTS GENERALLY

I will begin with some introductory instructions concerning patents and patent claims.

Patents are issued by the United States Patent and Trademark Office (sometimes called “the PTO”).

A patent includes what is called a “specification,” which contains a written description of the ~~claimed~~ invention telling what the invention is, how it works, how to make it, and how to use it.

A patent also includes what are called the “claims.” The “claims” of a patent define the boundaries of its protection and give notice to the public of those boundaries. Put another way, the words of the claims define what a patent covers.

The coverage of a patent must be assessed claim by claim, and each claim is effectively treated as if it were a separate patent. Each claim may be narrower or broader than another claim by setting forth more or fewer requirements. Therefore, what a patent covers depends, in turn, on what each of its claims covers.

When another company uses a product that is covered by a patent claim, that product “infringes” on the patent. The patent holder can bring suit to enforce its patent rights.

22. INFRINGEMENT—ELEMENTS

Singular contends that Google has infringed two patent claims: claim 53 of the '273 patent and claim 7 of the '156 patent. It contends that Google has used two products—the TPUv2 (also called the Jellyfish TPU) and TPUv3 (also called the Dragonfish TPU)—that are alleged to both of which infringe both claims. Google denies that those products infringe either claim patent, and further contends that the patent claims are invalid.

To prove a cause of action claim for patent infringement, Singular must prove each of the following elements by a preponderance of the evidence:

First, that Google ~~imported, sold, offered for sale, or~~ used a product that includes all the elements of the patent claim;

~~**Second**, that the product was made or used between the date that the patent issued and the date of the trial; and~~

~~**Second**~~**Third****Second**, that Google ~~imported, sold, offered for sale, or~~ used the product ~~between the date that the patent issued and the date of the trial~~after the patent issued.

23. INFRINGEMENT—ELEMENTS—FIRST ELEMENT

The first element of a cause of action claim of patent infringement is that the defendant ~~imported, sold, offered for sale, or~~ used a product that includes all of the elements of the patent claim.

Again, there are two patent claims at issue here: claim 53 of the '273 patent and claim 7 of the '156 patent.

The patent claims have different ~~subparts~~requirements, or “limitations.” For the sake of convenience, I will refer to them as ~~subparts~~“requirements” rather than limitations. To prove infringement, Singular must prove that the ~~accused relevant Google~~ products, which are Google's TPUv2 and TPUv3, includes, or “meets,” all of ~~those subparts~~the requirements in the claim.

Thus, for example, if a patent claim describes a device with three features—A, B, and C—a product infringes the claim if it has features A, B, and C. A product would not infringe that claim if, for example, it only had features A and B, or if it had A, B, and D, but not C.

Of course, a product may have many other features that have nothing to do with the patent. But if it includes all of the ~~subparts~~requirements of one of the patent claims, it infringes the claim~~patent~~.

~~INFRINGEMENT ELEMENTS — FIRST ELEMENT — RELATIONSHIP BETWEEN
TWO PATENT CLAIMS~~

~~Claim 53 of the '273 patent and claim 7 of the '156 patent overlap to a considerable extent. Claim 53 covers a device with three subparts; claim 7 covers a device with the same three subparts, plus two others.~~

~~Thus, if Singular proves that Google infringed claim 7, it has also proved that Google infringed claim 53. But the reverse is not true. In other words, if you decide that Google infringed claim 53, Singular must still show that claim 7 has the additional subparts to prove infringement on that claim.~~

24. INFRINGEMENT—ELEMENTS—SECOND ELEMENT

The second element of a claim of patent infringement is that the relevant product was

~~made or used between the date when~~after the patent was issued ~~and the date of this trial.~~

The '273 patent was issued on March 26, 2013. The '156 patent was issued on

December 22, 2015. ~~The trial began on January 8, 2024.~~

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~~INFRINGEMENT ELEMENTS THIRD ELEMENT~~

~~The third element of a claim of patent infringement is that the defendant imported, sold, offered for sale, or used the relevant product between the issue date of the patent and the date of this trial.~~

~~Again, the '273 patent was issued on March 26, 2013; the '156 patent was issued on December 22, 2015; and the trial began on January 8, 2024.~~

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**25. INFRINGEMENT—~~INDEPENDENT AND DEPENDENT CLAIMS~~TREAT BOTH
PATENT CLAIMS THE SAME**

This case involves two patent claims—one from the '273 patent and one from the '156 patent.

For the ~~claim~~ cause of action of infringement, you may treat both claims the same. Your verdict form will therefore ask simply whether the patent has been infringed.

~~For the defense of invalidity, different claims are treated differently. Your verdict form will therefore ask you to make separate decisions as to the relevant claims and defenses.~~

26. ~~INFRINGEMENT~~ CLAIM INTERPRETATION

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It is my role to define certain terms of the claims and it is your role to apply any definitions to the issues that you are asked to decide in this case. The meanings of the words of the patent claims must be the same when deciding both the issues of infringement and invalidity. For purposes of this case, you must use the following definitions:

The term “**execution unit**,” as used in both claims, means “processing element comprising an arithmetic circuit paired with a memory circuit.”

The term “**low precision**,” as used in both claims, means “for at least X=5% of the possible valid inputs to the first operation, the statistical mean, over repeated execution of the first operation on each specific input from the at least X% of the possible valid inputs to the first operation, of the numerical values represented by the first output signal of the LPHDR unit executing the first operation on that input differs by at least Y=0.05% from the result of an exact mathematical calculation of the first operation on the numerical values of that same input.”

The term “**high dynamic range**,” as used in both claims, means “the dynamic range of the possible valid inputs to the first operation is at least as wide as from 1/1,000,000 through 1,000,000.”

For any words in the claims for which I have not provided you with a definition, you should apply their common meaning as it would be understood by a person of ordinary skill in the art at the time of the invention.

27. INFRINGEMENT—INTENT TO INFRINGE NOT NECESSARY

You may find infringement even if none of Google's employees knew that what they were doing infringed the patent.

A person may be found to infringe a patent even if he did not act intentionally, and believed in good faith that what he was doing did not infringe the patent—indeed, even if he did not even know the patent existed.

28. INFRINGEMENT—WILLFUL INFRINGEMENT

~~Again, you may find infringement even if the defendant did not do so intentionally.~~

~~However, Singular~~the plaintiffs contend~~s~~ that Google ~~not only~~willfully infringed the '273 and '156 patents,~~but did so willfully. If you find infringement, you will be asked to determine whether Google willfully infringed. You will therefore be asked to determine both (1) whether Google infringed the patent and, if so, (2) whether it did so willfully.~~

To prove willful infringement, Singular must persuade you by preponderance of the evidence that Google actually knew of Singular's patent, knew that its acts would constitute infringement of the asserted claim, and intended to infringe that claim specifically. ~~either:~~

~~(1) —that Google actually knew that its actions constituted infringement of a valid patent, or~~

~~that it was so obvious that those actions constituted infringement of a valid patent that Google should have known.~~

29. INFRINGEMENT—WILLFUL INFRINGEMENT—KNOWLEDGE OF INFRINGEMENT

Knowledge cannot ordinarily be proved directly, for the obvious reason that there is no way of being able to look inside a person's mind. Rather, a person's state of mind must be determined by his statements and actions—that is, what he says or does, or does not say or do—and by the surrounding facts and circumstances.

Examples of factors that you may consider in determining whether Google knew that its actions constituted infringement of a valid patent claim include, but are not limited to:

(1) whether or not Google acted in accordance with the standards of commerce for its industry;

(2) whether or not Google intentionally copied Singular's S1 product ~~a product of Singular that is covered by the '273 patent or the '156 patent;~~

(3) whether or not Google reasonably believed it did not infringe or that ~~there is a reasonable basis to believe that Google did not infringe or~~ it had a reasonable defense to infringement; and

~~(4)~~ whether or not Google made a good-faith effort to avoid infringing claim 53 of the '273 patent or claim 7 of the '156 patent—for example, whether Google attempted to design around either claim ~~patent; and~~

~~(5)(4) whether Google tried to cover up its infringement.~~

30. INFRINGEMENT—WILLFUL INFRINGEMENT—CORPORATE PARTIES

Both Singular and Google are limited liability companies, or LLCs. That is a form of organization that is similar in many ways to a corporation.

LLCs are artificial entities. They can only act through their human agents—that is, their employees and agents. An LLC is responsible for the acts of its employees and agents performed within the scope of their authority. Such a person is acting within the scope of their authority if the person is engaged in the performance of duties that were expressly or implicitly assigned to the person by the LLC.

The “knowledge” or “intent” of an LLC is the knowledge or intent of such persons, acting within the scope of their authority. But to prove willful infringement, Singular must persuade you by preponderance of the evidence that a single Google employee or agent had (1) knowledge of one (or both) of Singular’s patent claim and (2) a specific intent to infringe that claim. You may not rely on the collective knowledge and intent of several employees or agents to find willful infringement. For example, Singular cannot prove willful infringement by establishing that one Google employee knew about Singular’s patent and a different employee knew that Google built a device that would infringe that patent.

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31. ~~INFRINGEMENT~~ INVALIDITY DEFENSES—OVERVIEW

Google contends that the two patent claims asserted by Singular are invalid for two separate reasons.

First, Google contends that the claims were “*obvious*” in light of the prior art.

Second, it also contends that the claims were “*anticipated*” by the prior art.

32. ~~INFRINGEMENT~~—INVALIDITY DEFENSES—BURDEN OF PROOF

A patent issued by the ~~PTO~~~~United States Patent Office~~ is presumed to be valid. That presumption of validity applies to each claim independent of the validity of any other claim in the patent. But the PTO sometimes issues invalid patent claims, and issued claims can be found invalid in court. In this case, you have the ultimate responsibility for deciding the facts regarding whether the claims of the patents are invalid.

In order to rebut that presumption, a party challenging the validity of a claim—here, Google—must prove the patent is invalid by clear and convincing evidence.

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33. ~~INFRINGEMENT—~~INVALIDITY DEFENSES—~~CONSIDER EACH CLAIM SEPARATELY~~ TREAT BOTH PATENT CLAIMS THE SAME

This case involves two patent claims—one from the '273 patent and one from the '156 patent.

In considering invalidity, you may treat both claims the same. Your verdict form will therefore ask simply whether the claim is invalid. ~~You must consider the validity of each claim separately. As to each claim, if you find that Google has proved that the claim is invalid for either (or both) of the two asserted reasons, you should find for Google as to that claim.~~

34. ~~INFRINGEMENT~~ INVALIDITY DEFENSES—DEFINITIONS GENERALLY

There are two terms relating to Google's invalidity defenses that I will define at the outset: "**prior art**" and "**person of ordinary skill in the art.**"

I will then instruct you on each of the reasons that Google contends that the asserted claims are invalid and explain what Google must establish by clear and convincing evidence to succeed on each issue.

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35. ~~INFRINGEMENT~~ INVALIDITY DEFENSES—"PRIOR ART"

The first term is "~~prior art~~." Under the patent laws, a person is entitled to a patent only if the invention claimed in the patent is new and not obvious in light of what came before—what is referred to as the "prior art."

In this case, Google contends that the prior art includes the VFLOAT system that discloses the claimed invention or requirements of the claimed invention.

To be prior art, the VFLOAT system~~item~~ must have been made, known, or used, ~~published, or patented~~ either (1) before the invention was made, ~~or~~ (2) more than one year before the filing date of the patent application (that is, June 19, 2009); or (3) by another inventor who did not abandon, suppress, or conceal it.

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36. ~~INFRINGEMENT~~ INVALIDITY DEFENSES—"PERSON OF ORDINARY SKILL
IN THE ART"

The second term is "**person of ordinary skill in the art**." Under the patent laws, several issues turn on how a "person of ordinary skill in the art" would consider or interpret a particular set of facts.

For the field of ~~art~~research relevant to the patents in this case, the parties have agreed that a person of ordinary skill in the art would have had at least a bachelor's degree in electrical engineering, computer engineering, applied mathematics, or the equivalent, and at least two years of academic or industry experience in computer architecture.

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37. ~~INFRINGEMENT~~—INVALIDITY DEFENSES—OBVIOUSNESS

The first issue is whether the claimed invention was “**obvious**.” The claimed invention must not have been “obvious” to a person of ordinary skill in the art at the time the patent application was filed (that is, June 19, 2009). Google contends that claims 53 and 7 are invalid because the claimed invention would have been obvious.

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In determining whether a claimed invention would have been obvious, you must consider (1) the level of ordinary skill in the art that someone would have had at the time when the patent application was filed; (2) the scope and content of the prior art; and (3) any differences between the prior art and the claimed invention. It is not necessary that Google show that the invention was identically disclosed or described by someone else.

Obviousness is determined from the perspective of a person of ordinary skill in the art. Such a person is presumed to know all of the prior art, not just what the inventor may have known. When faced with a problem in their field, such a person is able to apply their experience and ability to the problem and also to look to the prior art to help solve the problem.

Obviousness is also determined at the time that the patent application was filed. Thus, you must avoid using hindsight; that is, you should consider only what was known at the time, not what we know today. Likewise, you should not consider what was learned from the teachings of the patent, and you should not use the patent as a road map for selecting and combining items of prior art. You must put yourself in the place of a person of ordinary skill in the art at the time the patent application was filed.

Among the evidence you may consider in making the obviousness determination is whether the claimed invention was invented independently by other persons either before it was invented by Dr. Bates or at roughly the same time.

A claim that covers multiple embodiments is invalid if a single embodiment within the

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scope of the claim would have been obvious.

38. ~~INFRINGEMENT~~ **INVALIDITY DEFENSES—OBVIOUSNESS—SCOPE AND CONTENT OF THE PRIOR ART**

In considering whether the claimed invention was obvious, you must, among other things, determine the “scope and content of the prior art.”

Determining the “scope and content of the prior art” means that you should determine what is disclosed in the prior art relied on by Google. You must decide whether this prior art was reasonably relevant to the particular problem the inventor was attempting to solve in making the invention covered by the patent claims. Such relevant prior art includes prior art in the field of the invention, and also prior art from other fields that a person of ordinary skill in the art would look to when attempting to solve the problem.

The fact that any particular prior art was or was not considered by the PTO does not change Google's burden of proof. However, in making your decision whether Google has demonstrated that a claim is invalid by clear and convincing evidence, you may consider whether Google has presented any materially new prior art references that the PTO had no opportunity to evaluate.

In determining the differences between the invention covered by the patent claims and the prior art, you should not look at individual differences in isolation. You must consider the claimed invention as a whole and determine whether or not it would have been obvious in light of all of the prior art.

**39. ~~INFRINGEMENT~~ INVALIDITY DEFENSES—OBVIOUSNESS—
COMBINATION OF PRIOR ART**

The existence of every element of the claimed invention in the prior art does not necessarily prove that the claimed invention was obvious. Most, if not all, inventions rely on building blocks of prior art.

You should keep in mind that there must be some ~~reason~~~~motivation or suggestion~~ for ~~someone of ordinary skill in the art~~~~a skilled person~~ to make the combination covered by the patent claims. You should also consider whether someone reading the prior art would be discouraged from following the path taken by the inventor. In making that determination, you should take into account such factors as the following:

- (1) whether the claimed invention was merely the predictable result of using prior art elements according to their known function(s);
- (2) whether the claimed invention provides an obvious solution to a known problem in the relevant field;
- (3) whether the prior art teaches or suggests the desirability of combining elements claimed in the invention;
- (4) whether the prior art teaches away from combining elements claimed in the invention;
- (5) whether it would have been obvious to try the combinations of elements, such as when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions; and
- (6) whether the change resulted more from design incentives or other market forces.

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To find that it rendered the invention obvious, you must find that the prior art provided a reasonable expectation of success. The fact that an invention that combined elements found in existing prior art was “obvious to try,” without some expectation of success, is not sufficient to render that invention obvious.

40. ~~INFRINGEMENT~~ INVALIDITY DEFENSES—ANTICIPATION

The second issue is whether the claimed invention was “*anticipated*.” A person cannot obtain a patent on an invention if someone else has already made the same invention. In other words, the invention must be new. If an invention is not new, we say that it is “anticipated” by the prior art. An invention that is anticipated by the prior art is not entitled to patent protection.

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41. DAMAGES—GENERALLY

I will turn next to the issue of damages.

The fact that I am charging you on the issue of damages does not mean that I think damages should be awarded. I am giving you these instructions on damages solely because I am required to charge you on all phases of the case that you might have to consider. If Singular has not proved that Google ~~is liable~~ infringed the patent claims, or if Google has proved that the patent claims are invalid, then you should not consider the issue of damages.

42. DAMAGES—BURDEN OF PROOF

Singular has the burden to establish the amount of its damages, if any, by a preponderance of the evidence. While Singular is not required to prove the amount of its damages with mathematical precision, it must prove them with reasonable certainty. You may not award damages that are speculative, damages that are only possible, or damages that are based on guesswork.

43. DAMAGES—PATENT INFRINGEMENT DAMAGES

I will now instruct you about the measure of damages you may award Singular if you find that Google infringed one or more valid patent claims~~for Google's infringement of the patents.~~

Damages must be adequate to compensate Singular for the infringement. They may not be awarded to punish Google. The award should put Singular in approximately the same financial position that it~~they~~ would have been in if the infringement had not occurred.

Singular seeks a reasonable royalty as damages. A reasonable royalty is defined as the money amount Singular and Google would have agreed upon as a fee for use of the invention at the time just prior to when infringement began. You may not award damages for any products other than the accused products.

Any damages you may award are unrelated to the issue of willful infringement. In other words, if you decide that Google's infringement was willful, that decision should not affect any damages award you decide to give.

44. DAMAGES—REASONABLE ROYALTY

Singular seeks what is known as “a reasonable royalty” as damages.

A royalty is a payment made to a patent holder in exchange for the right to make, use, [import](#) or sell the claimed invention. A reasonable royalty is the amount of royalty payment that a patent holder and the infringer would have agreed to in a hypothetical negotiation taking place at a time [just](#) before the infringement first began. [The p](#)Parties have agreed that the reasonable royalty they would have agreed on here would have been a lump-sum payment from Google to Singular after the hypothetical negotiation.

In considering this hypothetical negotiation, you should focus on what the expectations of the patent holder and the infringer would have been had they entered into an agreement at that time, and had they acted reasonably in their negotiations. In determining these expectations, you must assume that both parties believed the patents [s](#) [were](#) [as](#) valid and infringed and the patent holder and infringer would have been willing to enter into an agreement.

The reasonable royalty you determine must be a royalty that would have resulted from the hypothetical negotiation, and not simply a royalty either party would have preferred. Evidence of things that happened after the infringement first began can be considered in evaluating the reasonable royalty only to the extent that the evidence helps in assessing what royalty would have resulted from a hypothetical negotiation. Although evidence of the actual profits or cost-savings an alleged infringer received may be used to determine the anticipated profits or cost-savings at the time of the hypothetical negotiation, the royalty may not be limited or increased based on the actual profits or cost-savings the alleged infringer realized.

45. DAMAGES—REASONABLE ROYALTY—RELEVANT FACTORS

In determining the reasonable royalty, you should consider all the facts known and available to the parties at the time the infringement began. Some of the kinds of factors that you may consider in making your determination are:

- (1) The royalties Singular has received for the licensing of the '273 and '156 patents, proving or tending to prove an established royalty;
- (2) The rates licensees have paid for the use of other patents that are comparable to the '273 and '156 patents;
- (3) The nature and scope of the license, as exclusive or nonexclusive, or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold. The parties have agreed here that any license would have been nonexclusive;
- (4) Singular's established policy and marketing program to maintain their patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly;
- (5) The commercial relationship between Singular and Google, such as whether they are competitors in the same territory in the same line of business, or whether they are inventor and promoter;
- (6) The effect of selling the patented specialty in promoting sales of other Google products, the existing value of the invention to Singular as a generator of sales of its nonpatented items, and the extent of such derivative or convoyed sales;
- (7) The duration of the patent and the term of the license. In this case, the duration of the '273 patents ends on June 14, 2029, and the duration of the '156 patent ends on March 19, 2029;
- (8) The established profitability of the product made under the patents, its commercial success, and its current popularity;

(9) The utility and advantages of the patented property over the old modes or devices, if any, that had been used for working out similar results;

(10) The nature of the patented invention, the character of the commercial embodiment of it as owned and produced by Singular, and the benefits to those who have used the invention;

(11) The extent to which Google has made use of the invention and any evidence probative of the value of that use;

(12) The portion of the profit or of the selling price that may be customary in the particular business or in comparable business to allow for the use of the invention or analogous inventions;

(13) The portion of the realizable profits that should be credited to the invention as distinguished from nonpatented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer;

(14) The opinion and testimony of qualified experts; and

(15) The amount that Singular and Google would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.

No one factor is dispositive. You may consider the evidence that has been presented to you in this case on each of these factors. You may also consider any other factors which in your mind would have increased or decreased the royalty Google would have been willing to pay and Singular would have been willing to accept, acting as prudent business entities.

46. DAMAGES—REASONABLE ROYALTY—APPORTIONMENT

The amount you find as damages must be based on the value attributable to [claim 53 of the '273 patent](#) and [claim 7 of the '156 patents](#), distinct from unpatented features of the accused products or other factors such as marketing or advertising, or Singular's [or Google's](#) size or market position.

A royalty compensating the patent holder for damages must [be based on](#) ~~reflect~~ the value attributable to the infringing features of the product, and no more. The process of separating the value of the allegedly infringing features from the value of all other features is called *apportionment*. When the accused ~~infringing~~ products have both patented and unpatented features, your award must be apportioned so that it is based only on the value of the patented features, and no more.

[Singular bears the burden to establish the amounts attributable to the patented feature and not to other technologies, features, or aspects of the accused products. Singular's evidence must be reliable and tangible; it cannot be speculative. Any evidence of a reasonable royalty must carefully tie proof of damages to the claimed invention's role in the marketplace.](#)

47. DAMAGES—ENTIRE MARKET VALUE RULE

Patented technology is often used or sold together with other components and features that are not covered by the patent. When patented technology is used in combination with non-patented features or components, damages may not be awarded based on the value of the entire combination unless the patent owner proves that the patented invention is of such paramount importance that it substantially created the value of those non-patented features. In other words, the patented invention must be the basis for customer demand for the product as a whole. Because it is unusual for claims drawn to an individual component or feature of a multi-component product to be the basis for customer demand for the product as a whole, damages based upon the entire value of a multi-component product are the exception, not the rule.

48. DAMAGES—SMALLEST SALABLE PATENT PRACTICING UNIT

Because a multi-component product has both infringing and non-infringing components, in such products, royalties should be based not on the entire product, but instead on the “smallest salable unit” that practices the patent and has close relation to the claimed invention. If the smallest salable unit is a multi-component product containing one or more non-infringing features with no relation to the patented feature(s), damages must only be based on the portion of the value of that product attributable to the patented technology. This may involve estimating the value of a feature that may not have ever been individually sold.

Under Singular’s infringement theory, the relevant requirements of the Asserted Claims involve only sub-components of the TPU chips.

49. DAMAGES—REASONABLE ROYALTY—NONINFRINGEMENT ALTERNATIVE

In determining a reasonable royalty, you may also consider evidence concerning the availability and cost of acceptable noninfringing substitutes to the patented invention at the time of the hypothetical negotiation. A substitute must not have infringed the patents and have been both available during the infringing period and acceptable to the accused infringer's purpose—that is, Google must have been able to receive the same benefit from the substitute as it did from the infringing products.

An alternative product may be considered “available” as a potential substitute even if the product was not on sale during the infringement period.

Factors suggesting the alternative was “available” include whether the material, experience, and know-how to make or use the alleged substitute were readily available at the time of infringement. A non-infringing substitute may be one that involved the modification of the infringing product to avoid infringement or the removal of the patented feature from the product altogether.

Factors suggesting the alternative was not available include whether the material was of such high cost as to render the alternative unavailable and whether an alleged infringer ~~could~~^{had} ~~te~~ design or invent around the patented technology to develop an alleged substitute.

50. FOREPERSON'S ROLE; UNANIMITY

I come now to the last part of the instructions, the rules for your deliberations. When you retire, you will discuss the case with the other jurors to reach agreement if you can do so. You shall permit your foreperson to preside over your deliberations, and your foreperson will speak for you here in court. Your verdict as to each claim must be unanimous—that is, all of you must agree on the verdict.

51. REACHING AGREEMENT

Each of you must decide the case for yourself, but you should do so only after considering all the evidence, discussing it fully with the other jurors, and listening to the views of the other jurors.

Do not be afraid to change your opinion if you think you are wrong. But do not come to a decision simply because other jurors think it is right.

It is important that you reach a verdict if you can do so conscientiously. You should not hesitate to reconsider your views from time to time and to change them if you are persuaded that this is appropriate.

It is important that you attempt to return a verdict, but of course, only if each of you can do so after having made your own conscientious determination. Do not surrender an honest conviction as to the weight and effect of the evidence simply to reach a verdict.

52. RETURN OF VERDICT FORM

I want to explain to you now the document called the verdict form. This is simply the written notice of the decision you will reach in this case.

[The court explains the verdict form.]

After you have reached a unanimous agreement on a verdict, your foreperson will fill in the form that has been given to you, sign and date it, and advise the jury officer outside your door that you are ready to return to the courtroom.

After you return to the courtroom, your foreperson will deliver the completed verdict form as directed in open court.

53. COMMUNICATION WITH THE COURT

If it becomes necessary during your deliberations to communicate with me, you may send through the jury officer a note signed by your foreperson or by one or more members of the jury. No member of the jury should ever attempt to communicate with me on anything concerning the case except by a signed writing, and I will communicate with any member of the jury on anything concerning the case only in writing, or orally here in open court. If you send out a question, I will consult with the parties as promptly as possible before answering it, which may take some time. You may continue with your deliberations while waiting for the answer to any question.

When you are communicating with me, please do not tell me—or anyone else—how the jury stands numerically or toward which decision the jury is leaning.